**Schistosoma mansoni (schistosomiasis; bilhariziasis)**

Signs and Symptoms of the Disease:

* 4 month hx of worsening abdominal pain, diarrhea, nausea, vomiting w/blood
* Abdminal pain in RUQ
* Enlarged liver & spleen w/evidence of portal hypertension
* High eosinophil count
* Had recently emigrated from Kenya

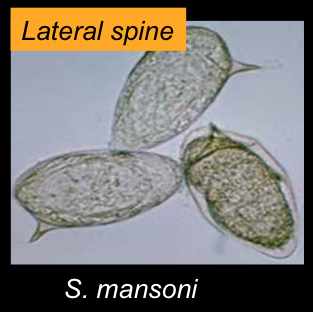
Epidemiology:

* Caused by blood trematodes & most cases are sporadic
* The most common bacterial cause of diarrheal illness in the US as well as worldwide! In the US incidence is 20 cases per 100,000
* Extremely common in children under 2YO
* All age groups are at risk for acquiring infection, & infants/young people particularly likely to be infected
* S. mansoni lives in the inferior mesenteric vein
* Adult worms are small, 12-26mm long and .3-.6mm wide (male & female remain paired together)
* Adult worms mate & lay eggs
* S. mansoni is found in parts of South America & in the Caribean, Africa & the ME
* S. japonicum is found in China & SE Asia
* S. haematobiym is found in Africa & the ME
* About 200 million people are infected w/schistosomes.
* There are 200,000 deaths per year
* Of parasites, 2nd to malaria in mortality rate

Pathology:

* Life cycle begins with eggs, shed with feces of a patient in the endemic area. Under optimal conditions for eggs in bodies of fresh water hatch and release miracidia, which swim and penetrate specific snail intermediate hosts. The stages in the snail include 2 generations of sporocytes and the production of cercariae which swim & penetrate the skin of the human host, where they shed their forked tail, becoming schistosomulae.
* The schistosomulae migrate through several tissues and stages to their residence in the veins.
* In the venous blood, adult male and female worms mate, and the female lays eggs 4 to 6 weeks.after cercarial penetration. Adult worms rarely are pathogenic. The female adult worm lives for appropriately 3 to 8 years and lays eggs throughout her life span. Adult worms reside in the lumen of mesenteric blood vessels for decades and resist all known immunologic effector mechanisms. The eggs are moved progressively toward the lumen of the intestine and are eliminated with feces.
* Chronic schistosomiasis is due to immunologic reactions to Schistosoma eggs trapped in tissues. Multiple immune responses are induced by infection; however, the dominant immunologic effector mechanism involves IgE, mast cells, and eosinophils. As with other helminth infections, the hallmark of Schistosoma infection is the appearance of eosinophilia and hypergammaglobulinemia of the IgE isotype. Activation of the Th2 subset of T cells (cellular immunity) in response to egg antigens in the liver is the primary pathogenic element in schistosomiasis. The Th2 response contributes to a profound granulomatous reaction (antigen specific T cells, macrophages, and eosinophils) resulting in some of the symptoms of chronic disease. Manifestations of granulomatous inflammation in liver include portal hypertension with hematemesis and heptasplenomegaly. In the latter stages of the disease, fibroblasts, giant cells, and B lymphocytes predominate, and the significant pathologic changes at that time, collagen deposition and fibrosis, result in liver damage that may be only partially reversible.

Diagnosis: Diagnosed based off of trichrome staining identifying characteristic fluke eggs





Differential diagnosis:

* Dysentery syndrome
* Infectious gastroenteritis (Salmonella)
* Inflammatory bowel disease
* Schistosomiasis
* Typhoid fever
* Viral hepatitis

Prevention & Treatment

Prevention:

* Really no way; Avoid fresh water in endemic areas

Treatment:

* Praziquantel
* In areas where praziquantel is less effective, use Oxamniquine

Complications

* Allergic dermatitis
* Katayama fever
* Chronic schistosomiasis of the bladder